

WHAT IS CLAIMED:

Claim 1. A method of suppressing antigen presenting cell-mediated lymphocyte proliferation in a mammalian host pre-exposed to a particular antigen comprising the step of administering to said host an effective amount of a Zot-related immunoregulator selected from the group consisting of Zot or zonulin, said amount effective to down-regulate the activity of said antigen presenting cell.

Claim 2. A method of suppressing antigen presenting cell-mediated lymphocyte proliferation to a particular antigen in a mammalian host comprising the step of administering to said host an effective amount of a Zot-related immunoregulator selected from the group consisting of Zot or zonulin in combination with said particular antigen, said amount effective to down-regulate the activity of said antigen presenting cell.

Claim 3. A method of treating a mammalian host afflicted with an auto-immune or immune-related disorder or disease comprising the step of administering to said host an effective amount of a Zot-related immunoregulator selected from the group consisting of Zot or zonulin, said amount effective to down-regulate antigen presenting cell-mediated lymphocyte proliferation.

Claim 4. A method of treating a mammalian host afflicted with an auto-immune or immune-related disorder or disease comprising the step of administering to said host an effective amount of a Zot-related immunoregulator selected from the group consisting of Zot or zonulin in combination with an antigen specific to said disease or disorder, said

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amount effective to down-regulate antigen presenting cell-mediated lymphocyte proliferation.

Claim 5. A method of treating of a mammalian host suffering from immune rejection subsequent to tissue or organ transplantation comprising the step of administering to said host an effective amount of a Zot-related immunoregulator selected from the group consisting of Zot or zonulin, said amount effective to down-regulate antigen presenting cell-mediated lymphocyte proliferation.

Claim 6. A method of treating a mammalian host suffering from immune rejection subsequent to tissue or organ transplantation comprising the step of administering to said host an effective amount of a Zot-related immunoregulator selected from the group consisting of Zot or zonulin in combination with a specific transplantation antigen, said amount effective to down-regulate antigen presenting cell-mediated lymphocyte proliferation.

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Claim 7. A method of treating a mammalian host afflicted with an inflammatory or allergic diseases or disorders comprising the step of administering an effective of a Zot-related immunoregulator selected from the group consisting of Zot or zonulin, said amount effective to down-regulate antigen presenting cell-mediated lymphocyte proliferation.

Claim 8. A method for the treatment of a mammalian host afflicted with an inflammatory or allergic diseases or disorders comprising the step of administering an effective of a Zot-related immunoregulator selected from the group consisting of Zot or zonulin in combination with a specific inflammatory related antigen or allergen, said

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amount effective to down-regulate antigen presenting cell-mediated lymphocyte proliferation.

Claim 9. The method of Claim 3 or 4 wherein said autoimmune or immune related disease or disorder is selected from the group consisting of multiple sclerosis, rheumatoid arthritis, insulin dependent diabetes mellitus, celiac disease, Sjogren's syndrome, systemic lupus erythematosus, auto-immune thyroiditis, idiopathic thrombocytopenic purpura, hemolytic anemia, Grave's disease, Addison disease, autoimmune orchitis, pernicious anemia, vasculitis, autoimmune coagulopathies, myasthenia gravis, polyneuritis, pemphigus, rheumatic carditis, polymyositis, Dermatomyositis, and scleroderma.

Claim 10. The method of Claim 7 or 8 wherein said inflammatory or allergic disease or disorder is selected from the group consisting of asthma, psoriasis, eczematous dermatitis, Kaposi's sarcoma, multiple sclerosis, inflammatory bowel disease, proliferative disorders of smooth muscle cells, and inflammatory conditions associated with mycotic, viral, parasitic, or bacterial infections.

Claim 11. The method of Claims 1 to 8 wherein said mammalian host is a human.

Claim 12. The method of Claims 1 to 8 wherein said mammalian host is selected from the group consisting of humans, bovines, ovines, porcines, felines, buffalos, canines, goats, equines, donkeys, deer and primates.

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Claim 13. The method of Claims 1 to 8 wherein said immunoregulator is administered in admixture with at least one of the group consisting of a

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pharmaceutically acceptable carrier, adjuvant and delivery vehicle.

Claim 14. The method of Claim 2, 4, 6 or 8 wherein said antigen is administered in admixture with at least one of the group consisting of a pharmaceutically acceptable carrier, adjuvant and delivery vehicle.

Claim 15. The method of Claim 2, 4, 6 or 8 wherein said antigen and said immunoregulator are concomitantly or sequentially administered.

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Claim 16. The method of Claims 1 to 8 wherein said immunoregulator is administered to a mucosal surface.

Claim 17. The method of Claim 2, 4, 6 or 8 wherein said antigen and said immunoregulator are administered to a mucosal surface.

Claim 18. The method of Claim 16 wherein said mucosal surface is selected from the intestinal epithelium, the lymphoid tissues, bronchial associated lymphoid tissues, nasal-associated lymphoid tissues, genital-associated lymphoid tissues, and tonsils.

Claim 19. The method of Claim 17 wherein said mucosal surface is selected from the intestinal epithelium, the lymphoid tissues, bronchial associated lymphoid tissues, nasal-associated lymphoid tissues, genital-associated lymphoid tissues, and tonsils.

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Claim 20. The method of Claims 1 to 8 wherein said immunoregulator is administered parenterally.

Claim 21. The method of Claim 2, 4, 6 or 8 wherein said antigen and said immunoregulator are administered parenterally.

Claim 22. The method of Claims 1 to 8 wherein the mode of administering said immunoregulator is selected from the group consisting of intravenous, intradermal, intramuscular, and subcutaneous.

Claim 23. The method of Claim 2, 4, 6 or 8 wherein the mode of administering said antigen and said immunoregulator is selected from the group consisting of intravenous, intradermal, intramuscular, and subcutaneous.

Claim 24. A method of suppressing antigen presenting cell-mediated lymphocyte proliferation in a culture of cells pre-exposed to a particular antigen comprising the step of contacting the culture with an amount of a Zot-related immunoregulator selected from the group consisting of Zot or zonulin, said amount effective to down regulate the activity of said antigen presenting cell.

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Claim 25. A method of suppressing antigen presenting cell-mediated lymphocyte proliferation in a culture of cells in response to an antigen comprising the step of contacting the culture with an amount effective to down regulate the activity of said antigen presenting cell of a Zot-related immunoregulator selected from the group consisting of Zot or zonulin in combination with said antigen, said amount effective to down regulate the activity of said antigen presenting cell.